

Diagnosis

- On the basis of clinical signs.
- Post-mortem lesions.
- Isolation and identification of virus in the laboratory. Detection of IBDV viral RNA in collected samples from infected birds.
- Enzyme linked immunosorbent assay (ELISA) test can be used for assessment of blood antibody status of the flock.

Is the IBD is zoonotic??

IBD virus is not zoonotic

Control of Gumboro disease

- There is no specific treatment for infectious bursal disease.
- Supportive treatment with normal saline solution (to prevent dehydration)
- Vitamin, especially Vitamin-K is advocated to prevent hemorrhage
- Immunity boosters like vitamin C and vitamin E
- Broad spectrum antibiotics can be administered to prevent secondary infection only upon veterinarian prescription.
- Disinfection of contaminated farms has achieved limited success.
- IBDV is hard to remove from an establishment because it is highly stable in its surroundings.
- Control is accomplished using vaccination.

In the event of disease outbreak:

Type of medication	Usage recommendations
Water sanitizers (anti-viral) mainly containing Potassium mono-persulphate	Water sanitation: 1 g/liter of drinking water. *House sanitation: 2-3 g/liter of water and sprayed in house in presence of birds to reduce virus load inside the house. *Addition of sugar or jaggery improves the water intake along with this sanitizer.
Antibiotics to counteract secondary bacterial infections like E.coli, CRD etc. Doxycycline and Neomycin combination Sulphamethaxazole and trimethoprim	1g/liter of drinking water for 12 hrs in a day for a period of 3-4 days.

Multi-vitamin and amino acid supplements may improve physiological systems and therefore production and body score.	10-15 ml/100 birds for 12 hrs in drinking water.
Immunity boosters to improve immune system function	10-15 ml/100 birds for 12 hrs in drinking water.
Kidney flushers to reduce tubule damage	10 ml/100 birds for 12 hrs in water for 3-5 days
Managerental strategies	- Tighten the biosecurity measures to a very high extent. - Temporary feed restriction in terms of quantity and quality may reduce mortality. - Vaccination during disease conditions must be done after consultation with poultry veterinarian.

Prevention: Mainly by vaccination.

Vaccination: schedule for Gumboro

Vaccine	Age of vaccination	Route	Dose per bird	Remarks
IBD intermediate intermediate plus	10-14 days	Eye drop, Nasal drop, Drinking water	1 drop	Available as 200/500/1000 doses (1 dose means 1 bird)
Booster dose	32-35 days			
IBD Killed (recommended for parent stocks)	14-16 weeks	Intramuscular or sub cutaneous		Available as 1000 doses. Also available as combination with Ranikhet disease.

In breeders and commercial layer stocks, vaccination must be performed periodically based on maternal antibody and serum titers (serological testing).



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INFECTIOUS BURSAL (GUMBORO) DISEASE: Occurrence and prevention in poultry



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What is Infectious Bursal Disease?

- Infectious bursal disease (IBD) also known as Gumboro disease caused by a virus, which is a member of the Birnavirus genus (Genus Avibirnavirus, Family Birnaviridae)
- Disease is mainly seen in young chickens.
- It is an economically important viral disease of young domestic layer and broiler chickens.
- This disease is extremely contagious and causes high morbidity (ill birds) and mortality rates.
- Incubation period of this disease is 3–4 days.
- It frequently strikes 2-6 weeks aged birds and no clinical signs in older birds.
- Vaccine induced Gumboro disease is very common in immune suppressed broilers after vaccination with IBD intermediate plus strains.
- This disease is declared as notifiable disease by World Organization for Animal Health (WOAH).

How disease is spread?

- Chickens are most severely affected at the age of 3-6 week.
- Infected clothing of farm workers.
- Poor litter management and ventilation.
- Non-pelleted feed containing inadequately heat-treated poultry by-product.
- Dropping of infected birds.
- In multi-age units, young birds that come into direct contact with infected flocks develop a persistent infection known as "rolling," which is challenging to manage.

Forms of disease

- Depending on the IBDV strain, age, breed and presence of maternal immunity, infectious bursal disease can cause clinical or subclinical disease in young chicks.

- Infections before 3 weeks of age are usually of subclinical type, while acute infections can be noticed after 3 weeks.

Clinical signs:

Depending on the IBDV strain's pathogenicity and the flock's susceptibility, acutely affected flocks exhibit variable (5–50%) morbidity and rapidly ascending mortality (5–50%). The clinical course of the disease will be altered by the presence of maternal antibodies.

- Fever, depression and the birds sit quietly with closed eyes
- Reduced feed intake and incoordination
- Sternal or lateral recumbency with coarse tremor or shivering at terminal stage
- Cloacal inflammation
- Chalky white white diarrhea
- Soiled vent feathers and ruffled feathers
- Affected birds peck at their vents and pericloacal feathers are stained with urates
- In sub clinical infection, the symptoms are less pronounced and the birds of less than 3 weeks of age appear dull and depressed
- Broiler weight gain is delayed by 3–5 days, and recovery takes place in less than a week.
- Severe immunosuppression with secondary bacterial infections like E. coli and chronic respiratory disease (CRD)

Post-mortem lesions

- Bursa is mainly affected by this Gumboro virus, bursal size initially increased gradually with edema and hemorrhages followed by a decrease in size and finally results in atrophy (smallest size) of bursa.
- Hemorrhages on breast and thigh muscle portions.



Dull and depressed broiler bird infected with IBD



Bursal organ hypertrophy



Bursa of Fabricius showing severe hypertrophy and hemorrhages



Hemorrhages in thigh muscle